

**Amendment and Response [Under 37 C.F.R. §1.116 - Expedited Examining Procedure]**

Page 2 of 7

Serial No.: 09/864,866

Confirmation No.: 2264

Filed: May 23, 2001

For: DNA REPAIR POLYPEPTIDES AND METHODS OF USE

from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises a nuclear or mitochondrial targeting sequence.

22. [THREE TIMES AMENDED] A method for increasing the repair rate of damaged bases in a cell, the method comprising introducing to a cell exposed to or at risk of exposure to an agent that damages DNA a composition comprising an amount of an isolated polypeptide effective to increase the repair rate of damaged DNA in the cell compared to a cell that does not comprise the polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises an exogenous nuclear or mitochondrial targeting sequence.

25. [THREE TIMES AMENDED] A method for treating mutagenesis in a subject, the method comprising introducing to a subject exposed to or at risk of exposure to an agent that damages DNA a composition comprising an effective amount of an isolated polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises an nuclear or mitochondrial targeting sequence.

26. [THREE TIMES AMENDED] A method for treating mutagenesis in a subject, the method comprising introducing to a subject exposed to or at risk of exposure to an agent that damages DNA a composition comprising an effective amount of an isolated polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises an exogenous nuclear or mitochondrial targeting sequence.

29. [THREE TIMES AMENDED] A method for treating immunosuppression in a subject, the method comprising introducing to a subject exposed to or at risk of exposure to an agent that damages DNA a composition comprising an effective amount of an isolated polypeptide,

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Page 3 of 7

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wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises a nuclear or mitochondrial targeting sequence.

30. [THREE TIMES AMENDED] A method for treating immunosuppression in a subject, the method comprising introducing to a subject exposed to or at risk of exposure to an agent that damages DNA a composition comprising an effective amount of an isolated polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises an exogenous nuclear or mitochondrial targeting sequence.

33. [THREE TIMES AMENDED] A method for treating tumor formation in a subject, the method comprising introducing to a subject exposed to or at risk of exposure to an agent that damages DNA a composition comprising an effective amount of an isolated polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises a nuclear or mitochondrial targeting sequence.

34. [THREE TIMES AMENDED] A method for treating tumor formation in a subject, the method comprising introducing to a subject exposed to or at risk of exposure to an agent that damages DNA a composition comprising an effective amount of an isolated polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises an exogenous nuclear or mitochondrial targeting sequence.

37. [THREE TIMES AMENDED] A method for treating apoptotic cell formation in a subject, the method comprising introducing to a subject exposed to or at risk of exposure to an agent that damages DNA a composition comprising an effective amount of an isolated

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Page 4 of 7

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polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises a nuclear or mitochondrial targeting sequence.

38. [THREE TIMES AMENDED] A method for treating apoptotic cell formation in a subject, the method comprising introducing to a subject exposed to or at risk of exposure to an agent that damages DNA a composition comprising an effective amount of an isolated polypeptide, wherein the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, and wherein the polypeptide further comprises an exogenous nuclear or mitochondrial targeting sequence.